West Nile Virus and the Ten Essential Services

A Framework for Understanding and Communicating A Core Public Health Service
April - 2003

In 1988 the Institute of Medicine (IOM) produced a report, *The Future of Public Health*. Among other findings, the IOM noted that pubic health was fractionated and the public lacked a clear understanding of the basic or core functions of public health. In 1994, *The Ten Essential Services of Public Health* was developed as an alternative means of organizing and presenting public health services and activities.

The Ten Essential Services provide a means to look at an issue in a comprehensive and structured manner, addressing all aspects of the issue, not just the interesting or problematic ones. As applied to West Nile Virus (WNV), one can frame the issue and the approach of the Washington State Department of Health (DOH) into the 10 essential services as follows:

1. **Monitor status** to identify issues of public health importance related to WNV –
   - Noted the arrival of WNV in the United States in 1999.
   - Noted its arrival in Washington state in late summer, 2002, in birds and horses.
   - Noted the magnitude of the epidemic and epizootic in the U.S. during 2002.
   - The full extent of how WNV will manifest in Washington will not be known until the fall of 2003.
   - Monitoring data from the Centers for Disease Control (CDC) and other states is our primary source of information used to anticipate impacts. These impacts can range from significant to minor.

2. **Diagnose and investigate** WNV related health hazards in the community –
   - Initiated mosquito trapping to identify potential carriers of WNV, and confirmed that such carriers exist throughout the state.
   - Continue seasonal surveillance to detect WNV infections in dead birds beginning in April 2003 through the end of the mosquito season.
   - Coordinating with the Washington State Department of Agriculture (WSDA) to receive reports of WNV infection in horses.
   - Developed capability and capacity for the DOH Public Health Laboratories to provide diagnostic testing for suspected cases of WNV infection in humans.
   - Developed case report forms and protocols to facilitate the identification, diagnosis and reporting of human WNV illness and death.

3. **Inform, educate and empower** people about WNV related health issues in their community -
    - Developed a communication plan for the DOH that will be shared with local health jurisdictions.
    - Developed a brochure and distributed it to all local health jurisdictions and other state agencies for their use.
    - Set up a toll – free telephone number with basic information on WNV issues.
    - Set up a web page with more detailed information on WNV, with links to various other resources sites, both in state and federal.
    - Developed resource packets for use with media and other interested groups or parties.
    - Initiated several media releases and will continue to do so throughout the summer.

4. **Mobilize partnerships** to identify and solve WNV related health problems –
    - Active working relationships with Washington State Department of Ecology (DOE) and WSDA to facilitate information and access to pesticide applications.
    - Worked with local health jurisdictions to clarify roles and responsibilities as now contained in statute for mosquito control efforts.
    - Partnered with the U.S. Army at Fort Lewis to prefect mosquito surveillance techniques.
    - Worked with local governments and mosquito control districts on control efforts, including mosquito surveillance techniques.
    - Worked with local health jurisdictions to clarify roles and responsibilities in communicable disease surveillance and reporting.
    - Presented information regarding mosquito control and employee safety measures to other state agencies - such as Department of Natural Resources, Washington State Parks and Recreation, Department of Transportation, and Department of Fish and Wildlife - that may own mosquito-breeding areas.
    - Coordinated with Washington State University for expanded laboratory capacity to exam dead birds.
    - Negotiated with CDC for funding to assist with surveillance activities within the state.
    - Contacted the Washington State Medical Association and the Washington Veterinary Medical Association to provide current clinical and diagnostic information to professionals concerning WNV.
    - Contacted the Plan Medical Directors and Pharmacy Benefits Managers for orientation of understanding of potential WNV impacts on their industry.

5. **Link human resources** to needed WNV related health services and resources –
    - Used CDC funding and General Fund State to enhance the agency's vector control efforts to 2+ full time equivalents (FTEs) since 2001.
    - Dedicated a portion of an FTE to serve as WNV coordinator for this upcoming summer season.
    - Hired project employees to survey county readiness, develop web sites for rapid reporting, and assist with mosquito trapping and identification.
    - Created and filled a management level position in the agency for a State Public Health Veterinarian with responsibility and knowledge of WNV issues.

6. **Develop policies and plans** that support individual and community WNV related health needs –
    - Developed a statewide response plan and distributed it to local agencies (Brown Book).
    - Articulated individual protection measures in WNV plans and communication efforts.
    - Provided education to local government and community groups on creation of mosquito control districts and the functions of such districts.
    - Informed critical policy bodies in the state of the issue and the plan: Washington State Legislature, Washington State Board of Health, leadership of local health and local government, and other state agency executive managers.

7. **Comply with laws, regulations and policies** that protect WNV related health and ensure safety –
    - Thoroughly reviewed the existing laws and regulations that apply to mosquito control, and control of vector borne diseases.
    - Coordinated with DOE and WSDA on procedures and limitations associated with application of pesticides within the state of Washington, and secured a blanket National Pollution Discharge Elimination System (NPDES) permit that will be available statewide for any entity wishing to apply larvicide's under our general provisions and control.
    - Reviewed the notifiable conditions WAC 246-101 that requires cases of viral encephalitis and rare diseases of public health importance to be reported by health care providers to their local health authorities.
    - Familiarized ourselves with the laws regarding Integrated Pest Management (IPM) requirements in 17.15 RCW related to broadcast spraying of pesticides.
    - Established a dialogue and will continue to work with WDFW for ways to condition applications to reduce impacts of any pesticide use to non-target species, or the introduction of non-native fish species to control mosquitoes (RCW 70.22).

8. **Assure competent DOH and local workforce** –
    - Provided enhanced training to agency workforce on mosquito surveillance, environmental surveillance, and health affects of pesticide use.
    - Provided training to agency laboratory staff and epidemiologists.
    - Provided training to local health personnel and others on mosquito trapping and identification, dead bird surveillance techniques, and mosquito control methods.

9. **Evaluate the effectiveness**, accessibility, and quality of WNV related health services –
    - DOH is prepared to evaluate and modify the effectiveness of our surveillance and response plan as the summer progresses.
    - Formed and maintain an internal steering group that will monitor the emergence of the disease in Washington and modify our response as necessary.
    - Evaluate our response more formally after this year's mosquito season has passed, and will share that evaluation with interested parties.

10. **Conduct research** for new insights and innovative solutions to WNV related heath problems and issues –
    - Consider innovative solutions and approaches to WNV surveillance and response, both in forms of education and control.
    - Continue to monitor the research and experience of states that have a longer and more involved history with WNV, as well as results of CDC studies currently underway.